

ABSTRACT

In an optical transmission system according to one aspect of the present invention, for transmitting a WDM light from a transmission station to a reception station, utilizing a Raman amplifier, the Raman amplifier comprises: an optical amplification medium; a pumping light source generating a plurality of pumping lights having wavelengths different from each other; an optical device introducing the plurality of pumping lights to the optical amplification medium; and control means for controlling the pumping light source, the transmission station sends out a plurality of reference lights having wavelengths at which respective Raman gain obtained by the plurality of pumping lights reach peaks or wavelengths close to the above wavelengths, and the control means controls the plurality of pumping lights based on the optical powers of the plurality of reference lights. Thus, it becomes possible to accurately manage the optical power balance of the WDM light and the optical power of the entire WDM light.